	CHIP APPEARANCE		CHIP SIZE	1,6 × 2,0 mm
			CHIP THICKNESS	460 ± 30 μm (or 280 ± 30 μm)
	BONDING PAD DIMENSION	1	INPUT	240 × 240 μm
		2	OUTPUT	240 × 240 μm
		3	OUTPUT	240 × 240 μm
		4	ADJ	240 × 240 μm
			SCRIBE LINE WIDTH	80 μm
			TOP METAL	AISI
			BACK METAL	- (or Ti-Ni(V)-Ag)
			WAFER SIZE	100 mm

ABSOLUTE MAXIMUM RATINGS OVER OPERATING TEMPERATURE RANGE (UNLESS OTHERWISE NOTED)

	LM317	UNIT
Input-to-output differential voltage, $V_I - V_O$	40	V
Continuous total dissipation at 25 °C free-air temperature	2	W
Continuous total dissipation at (or below) 25 °C case temperature	15	W
Operating free-air, case, or virtual junction temperature range	0 to 125	°C
Storage temperature range	-65 to 150	°C
Lead temperature 1.6 mm (1/16 inch) from case for 10 seconds	260	°C

RECOMMENDED OPERATING CONDITIONS

	LM317		UNIT
	MIN	MAX	
Output current, I_O	10	1500	mA
Operating virtual junction temperature, T_J	0	125	°C

electrical characteristics over recommended ranges of operating virtual junction temperature (unless otherwise noted) (see Note 1)

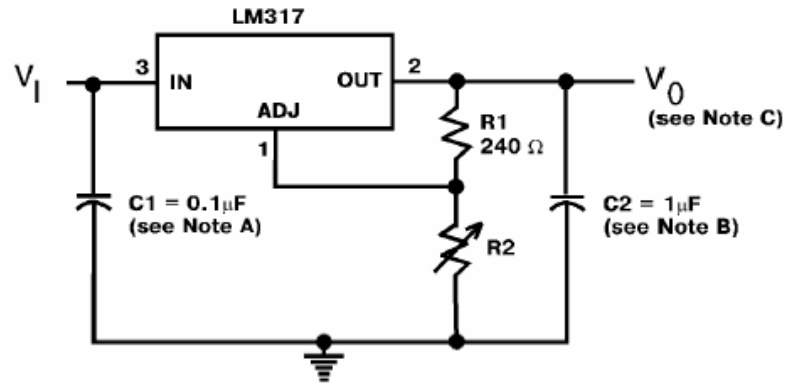
PARAMETER	TEST CONDITIONS*	LM317			UNIT	
		MIN	TYP	MAX		
Input regulation (See Note 2)	$V_I - V_O = 3\text{ V to } 40\text{ V}$, (See Note 3) $I_O = 10\text{ mA to } 1.5\text{ A}$	$T_J = \text{MIN to MAX}$	0.01	0.04	% / V	
			0.02	0.07		
Ripple rejection	$V_O = 10\text{ V}$, $f = 120\text{ Hz}$		65		dB	
	$V_O = 10\text{ V}$, $f = 120\text{ Hz}$ 10-μF capacitor between ADJ and ground	66	80			
Output regulation	$I_O = 10\text{ mA to } 1.5\text{ A}$, $T_J = 25\text{ °C}$, (See Note 3)	$V_O \leq 5\text{ V}$	5	25	mV	
		$V_O > 5\text{ V}$	0.1	0.5	%	
	$I_O = 10\text{ mA to } 1.5\text{ A}$, (See Note 3)	$V_O \leq 5\text{ V}$		20	70	mV
		$V_O > 5\text{ V}$		0.3	1.5	%
Output voltage change with temperature	$T_J = \text{MIN to MAX}$		1		%	
Output voltage long-term drift (see Note 4)	After 1000 h at $T_J = \text{MAX}$ and $V_I - V_O = 40\text{ V}$		0.3	1	%	
Output noise voltage	$f = 10\text{ Hz to } 10\text{ kHz}$, $T_J = 25\text{ °C}$		0.003		%	
Minimum output current to maintain regulation	$V_I - V_O = 40\text{ V}$		3.5	10	mA	
Peak output current	$V_I - V_O \leq 15\text{ V}$	1.5	2.2		A	
	$V_I - V_O \leq 40\text{ V}$, $T_J = 25\text{ °C}$	0.15	0.4			
Adjustment-terminal current			50	100	μA	
Change in adjustment-terminal current	$V_I - V_O = 2.5\text{ V to } 40\text{ V}$, $I_O = 10\text{ mA to } 1.5\text{ A}$		0.2	5.0	μA	
Reference voltage (output to ADJ)	$V_I - V_O = 3\text{ V to } 40\text{ V}$, $I_O = 10\text{ mA to } 1.5\text{ A}$, $P \leq 15\text{ W}$	1.2	1.25	1.3	V	

* Unless otherwise noted, these specifications apply for the following test conditions: $V_I - V_O = 5\text{ V}$ and $I_O = 0.5\text{ A}$. For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.

NOTES:

- All characteristics are measured with a 0.1 - μF capacitor across the input and a 1 - μF capacitor across the output.
- Input regulation is expressed here as the percentage change in output voltage per 1 - V change at the input.
- Pulse testing techniques are used to maintain the junction temperature as close to the ambient temperature as possible. Thermal effects must be taken into account separately.
- Since long-term drift cannot be measured on the individual devices prior to shipment, this specification is not intended to be a guarantee or warranty. It is an engineering estimate of the average drift to be expected from lot to lot.

TYPICAL APPLICATION DATA



NOTES:

- A. Use of an input bypass capacitor is recommended if regulator is far from filter capacitors.
 B. Use of an output capacitor improves transient response but is optional

C. Output voltage is calculated from the equation : $V_0 = V_{ref} \left(1 + \frac{R_2}{R_1} \right)$

V_{ref} equals the difference between the output and adjustment terminal voltages

Probing spec (Ta = 25°C) chips on wafer

№	Name (Mode)	Limit			Condition		
		MIN	MAX	UNIT	INPUT	GROUND	OUTPUT
1	Input current	- 85.0	-	uA	22 V	0 V	- 10 uA
2	Reference voltage (output to ADJ)	1,225	1,275	V	45 V		- 9 mA
3					45 V		- 50 mA
4					42 V		- 50 mA
5					42 V		- 9 mA
6					4 V		- 9 mA
7					4 V		- 200 mA
				30 V	- 200 mA		